

OPERATOR'S MANUAL

COUPLER AMPLIFIER	AA-601H ✓
ACG/CAP COUPLER	AK-650H ✓
RESP/SPHYGMO COUPLER	AR-650H ✓
ISOTONIC COUPLER	EG-650H ✓
DIRECT INPUT COUPLER	AJ-650H ✓
FREE COUPLER	EK-660H ✓

GENERAL HANDLING PRECAUTIONS

This device is intended for use only by qualified medical personnel.

Please read these precautions thoroughly before attempting to operate the instrument.

1. To safely and effectively use the instrument, its operation must be fully understood.

2. When installing or storing the instrument, take the following precautions:

- (1) Avoid moisture or contact with water, extreme atmospheric pressure, excessive humidity and temperatures, poorly ventilated areas, and dusty saline or sulphuric air.
- (2) The instrument should be placed on an even, level floor. Vibration and mechanical shock should be avoided even during moving.
- (3) Avoid placing in an area where chemicals are stored or where there is danger of gas leakage.
- (4) The power line source to be applied to the instrument should correspond in frequency and voltage to specifications, and have allowable current capacity.
- (5) Choose a room where a proper grounding facility is available.

3. Before Operation

- (1) Check that the instrument is in perfect operating order.
- (2) Check that the instrument is grounded properly.
- (3) Check that all cords are connected properly.
- (4) Pay extra attention when the instrument is in combination with other instruments to avoid misdiagnosis or other problems.

(5) All circuitry used for direct patient connection must be doubly checked.

(6) Check that battery voltage and battery condition are perfect when using battery-operated models.

4. During Operation

- (1) Both the instrument and the patient must receive constant, careful attention.
- (2) Turn power off or remove electrodes and/or transducers when necessary to assure the patient's safety.
- (3) Avoid direct contact between the instrument and the patient.

5. To Shutdown After Use

- (1) Turn power off with all controls returned to their original positions.
- (2) Remove the cords gently; do not use force to remove them.
- (3) Clean the instrument together with all accessories to keep them ready for their next use.

6. The instrument must receive expert, professional attention for maintenance and repairs. When the instrument is not functioning properly, it should be clearly marked to avoid operation while it is out of order.

7. The instrument must not be altered or modified in any way.

8. Maintenance and Inspection:

- (1) The instrument and parts should undergo regular maintenance inspection at least every 6 months.
- (2) If stored for extended periods without being used, make sure prior to operation that the instrument is in perfect operating condition.
- (3) Technical information such as circuit diagrams, parts list, descriptions, calibration instructions or other information will be available for suitably qualified user technical personnel upon request from your Nihon Kohden distributor.

9. **When the instrument is used with an electrosurgical instrument, careful attention should be paid to the application and/or location of electrodes and/or transducers to avoid possible burn to the patient.**
10. **When the instrument is used with a defibrillator, make sure that the instrument is protected against defibrillator discharge. If not, remove patient cables and/or transducers from the instrument to avoid possible damage.**

WARRANTY POLICY

Nihon Kohden Corporation (NKC) shall warrant its products against all defects in materials and workmanship for one year from the date of delivery. However, consumable materials such as recording paper, ink, stylus and battery are excluded from the warranty.

NKC or its authorized agents will repair or replace any products which prove to be defective during the warranty period, provided these products are used as prescribed by the operating instructions given in the operator's and service manuals.

No other party is authorized to make any warranty or assume liability for NKC's products. NKC will not recognize any other warranty, either implied or in writing. In addition, service performed by someone other than NKC or its authorized agents or technical modification or change of products without prior consent of NKC may be cause for voiding this warranty.

Defective products or parts must be returned to NKC or its authorized agents, along with an explanation of the failure. Shipping costs must be pre-paid.

In the USA and Canada other warranty policies may apply.

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Introduction

The units are plug-in units of the RM-6000 Series Polygraph. The Coupler Amplifier, Model AA-601H, amplifies various signals in combination with the Couplers. The AA-601H can also be used as a DC amplifier when not combined with the couplers.

Please read the manual thoroughly prior to operation. Also please refer to the manuals of the Polygraph Amplifier console and other plug-in units.

Features

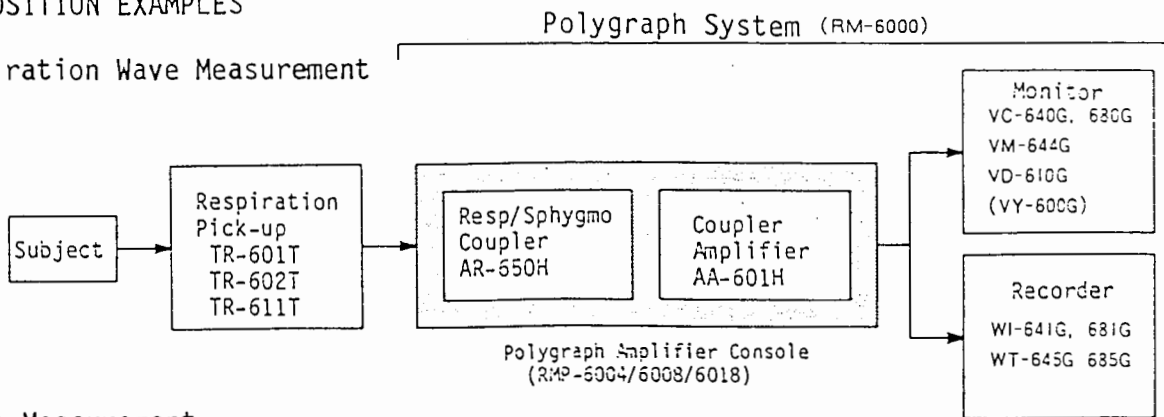
1. The AA-601H can be used as a multi-purpose amplifier in combination with various types of couplers. The coupler is a signal conditioning unit which converts the transducer signal into an electronic signal.
2. The AA-601H supplies power to the Coupler which is plugged in the AA-601H and also supplies CAL and INST signals to the Coupler. Therefore the operation is easy.
3. The AA-601H can be used as a DC and an AC amplifier. Time constant selection is also possible.

Composition

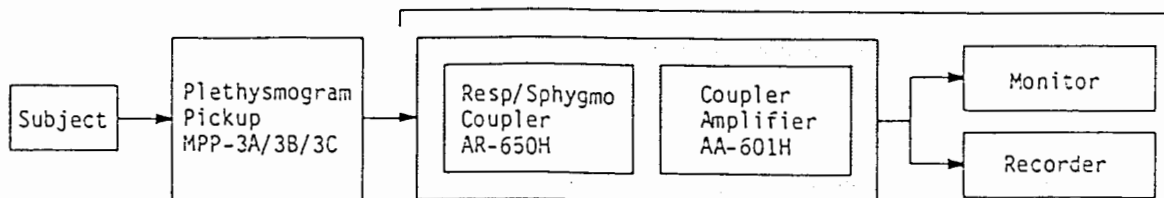
Various combinations of the transducers, the couplers and the coupler amplifier are possible as described below. Composition examples and a block diagram of the Coupler Amplifier (AA-601H) follow.

COMPOSITION EXAMPLES

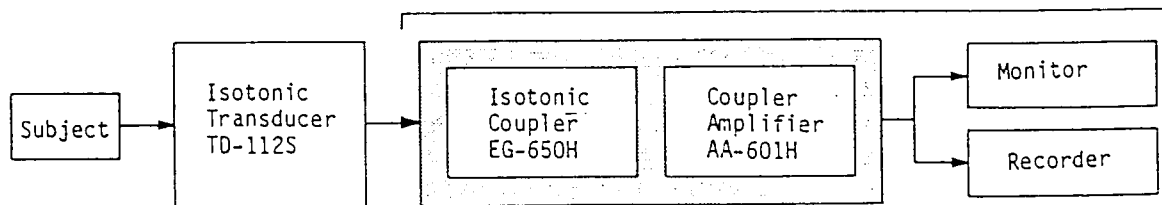
Respiration Wave Measurement



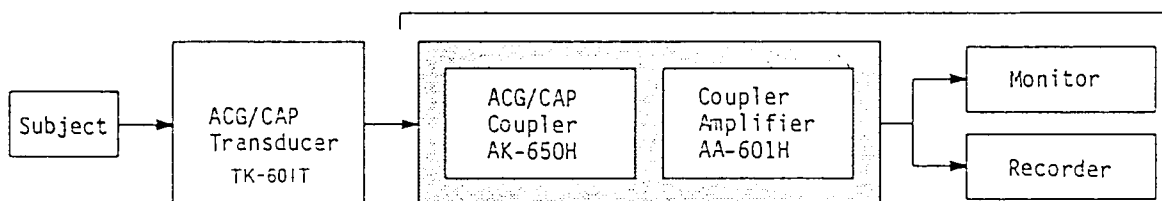
Pulse Measurement



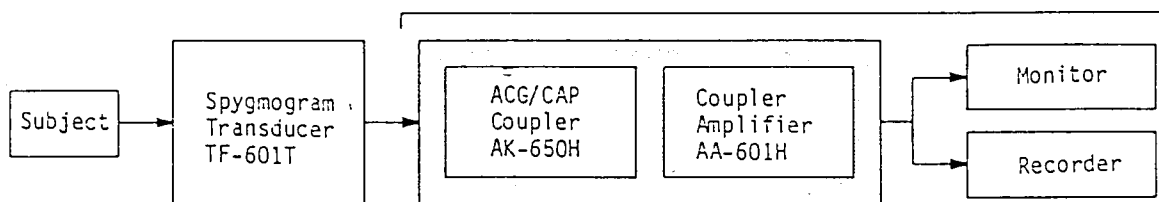
Displacement Measurement



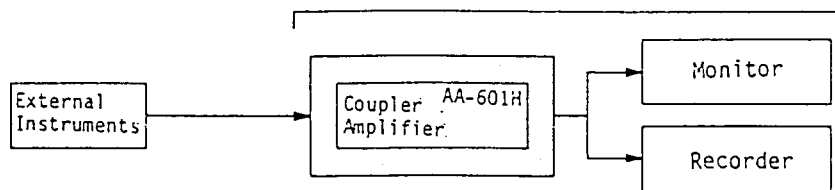
ACG-PCG Measurement



Sphygmogram Measurement

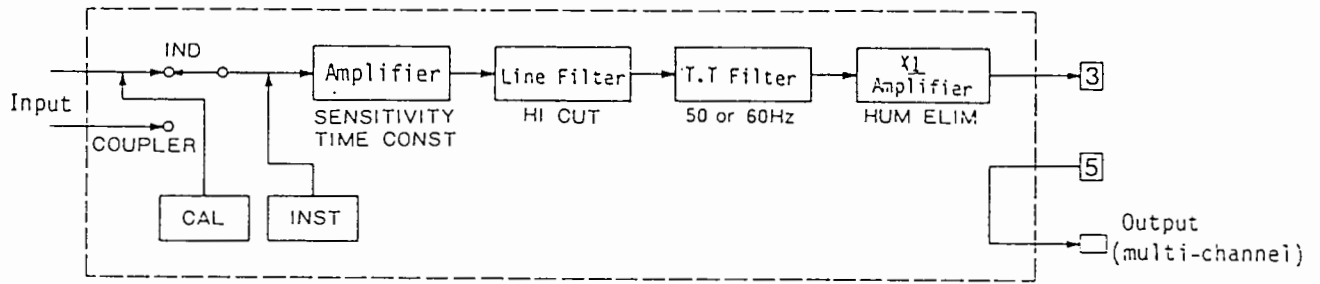


DC Signal Measurement

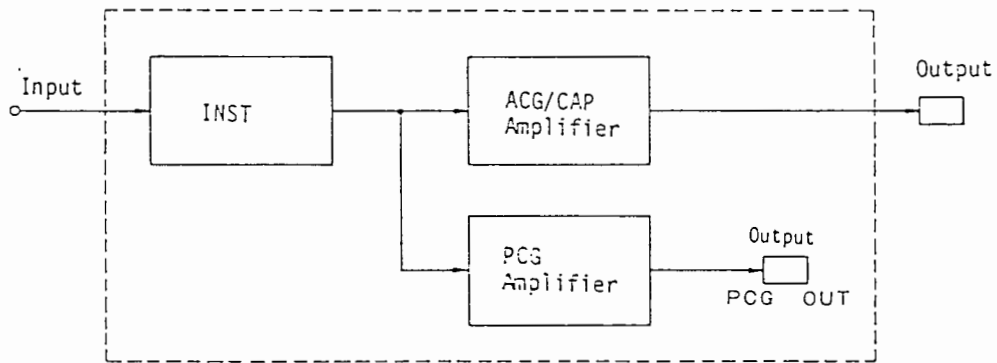


BLOCK DIAGRAMS

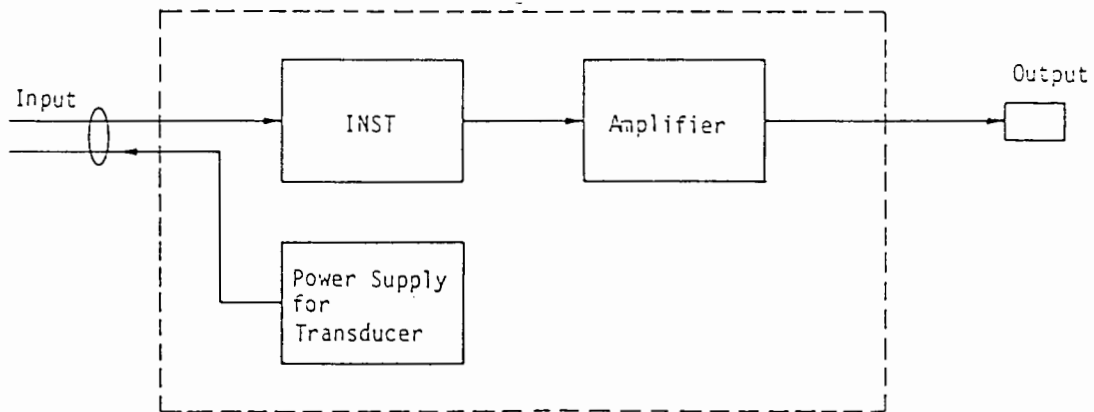
Coupler Amplifier AA-601H



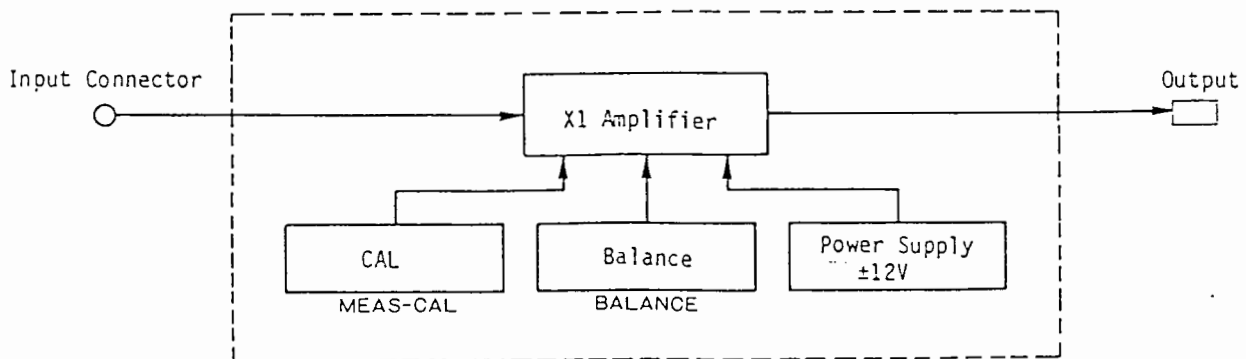
ACG/CAP Coupler AK-650H



Resp/Sphygmo Coupler AR-650H



Isotonic Coupler EG-650H



Controls and Switches

COUPLER AMPLIFIER AA-601H

Refer to Panel Illustration on page 23.

(1) Coupler
Accomodation

Various types of couplers can be plugged in at this location. When a coupler is not plugged in, mount a blank panel EK-650H here.

(2) TIME CONST

Selects the time constant of the amplifier.

(3) HI CUT

Selects high frequency characteristics of the amplifier. The frequency characteristic is 3KHz (-3dB) when filter is set to OFF.

(4) SENSITIVITY

Selects the sensitivity of the amplifier.

(5) SENSITIVITY

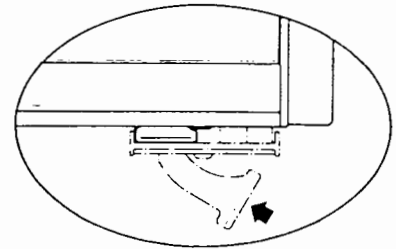
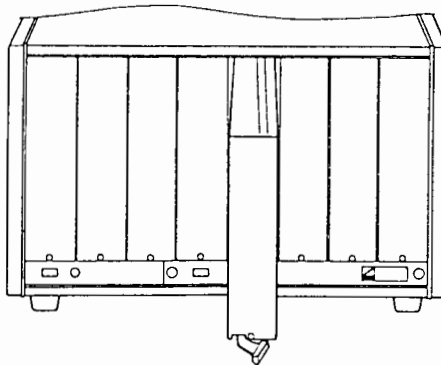
Fine controls the amplifier sensitivity.

(6) HUM ELIM

Eliminates AC interference when the switch is set to the upper position.

(7) Module Lock Lever

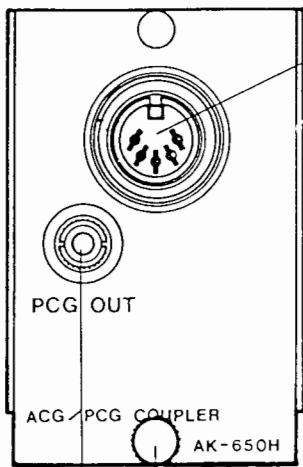
Pull the lever to remove the module from the housing cabinet. Push the lever to lock the module in the housing cabinet.
To set the internal switches, remove the plug-in unit by pulling this lever. Then remove the side shield plate. After setting the selector switch, mount the shield plate to its original location and plug the unit back into the console.



(8) IND-COUPLER

When the coupler is plugged into the Coupler Amplifier AA-601H, set this switch to the COUPLER position. When the signal is applied to the Coupler Amplifier AA-601H through the independent input mounted on the Polygraph amplifier Console, set this switch to the IND position.
When this switch is set to the IND position and the CAL switch on the console is pressed, a calibration signal of 1DIV is applied to the Coupler Amplifier.

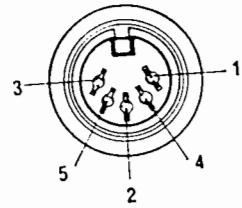
ACG/CAP COUPLER AK-650H



(1) Input Connector

Connect the ACG/CAP Transducer, TK-601T or Sphygmograph transducer, TF-601T. Color code (blue) around the input connector coincides with that on the mating transducer connector. Pin wiring is as follows.

- 1: Not connected
- 2: 0 volt
- 3: + input
- 4: Not connected
- 5: - input



The plug to be connected is:

Type MAS5100, male
Code Number 5490077

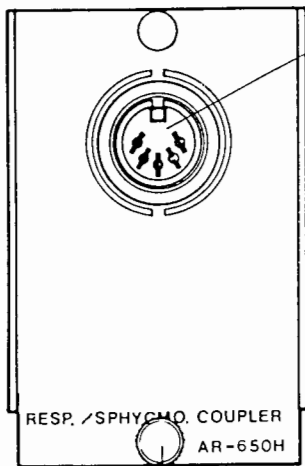
(2) PCG OUT

A signal which appears at this terminal should be connected to the Direct input coupler AJ-650H which is plugged into the PCG amplifier AS-650H, in order to monitor and record the PCG signal.

(3) Coupler Fixing Knob

Fixes the coupler to the coupler amplifier AA-601H.

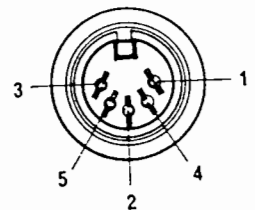
RESP/SPHYGMO COUPLER AR-650H



(1) Input Connector

Connects the Respiration pickup (TR-601T, -602T, -611T, -612T) or Plethysmogram pickup (MPP-3A, -3B, -3C). Color code (black or blue) around the input connector coincides with that around the mating pickup connector. Pin wiring is as follows.

- 1: +3 volt
- 2: 0 volt
- 3: + input
- 4: Not connected
- 5: Not connected



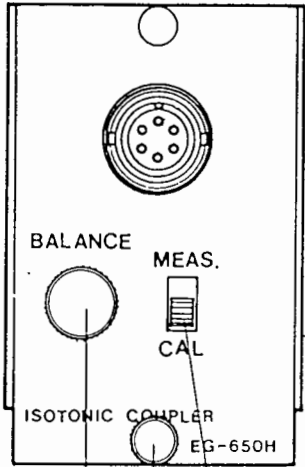
The plug to be connected is:

Type MAS 5100, male
Code Number 5490077

(2) Coupler fixing knob

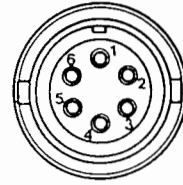
Fixes the Coupler to the coupler Amplifier AA-601H.

ISOTONIC COUPLER EG-650H



(1) Input Connector Connects the Isotonic transducer (TD-112S). Pin wiring is as follows.

- 1: Input
- 2: 0 volt
- 3: +12 volt
- 4: Not connected
- 5: -12 volt
- 6: 0 volt



The plug to be connected is:
 Type RM 12BRD-6S
 Code Number 5355045

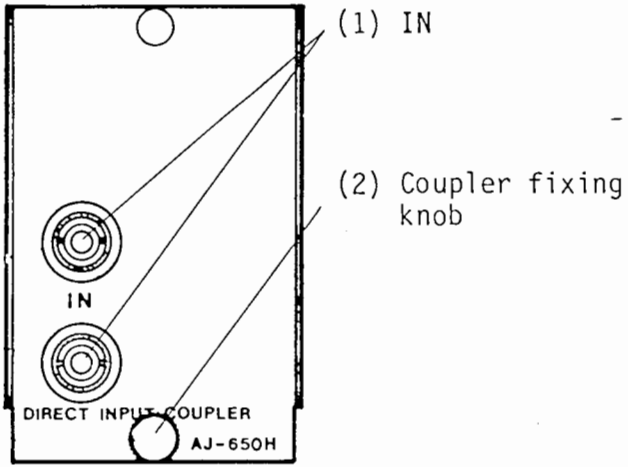
(2) BALANCE Adjusts the coupler output voltage. Adjust the baseline position to zero when the transducer is applied to the subject.

(3) MEAS-CAL
 MEAS: Set the switch to this position when measuring the signal supplied from the transducer.
 CAL: Set the switch to this position to calibrate the coupler. After setting the switch to CAL, and confirming that the displacement is zero, press the CAL switch on the Polygraph amplifier console (RMP-6004/6008/6018.)

(5) 10mm/1mm Calibration signal selector: Selects calibration signal amplitude of either 10mm or 1mm.

(4) Coupler fixing knob To fix the coupler to the Coupler Amplifier.

DIRECT INPUT COUPLER AJ-650H



Input terminals to apply an input signal directly into the Coupler Amplifier. The two terminals are connected in parallel.

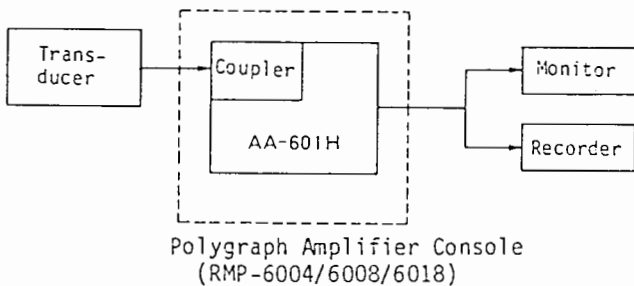
For fixing the Coupler to the Coupler Amplifier.

Preparation

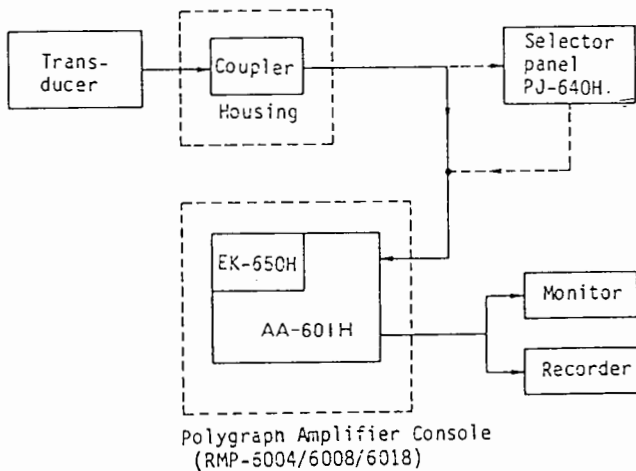
SYSTEM COMPOSITION

Compose the system from among three combinations according to the purpose of measurement.

A. When the coupler is plugged into the Coupler Amplifier AA-601H.

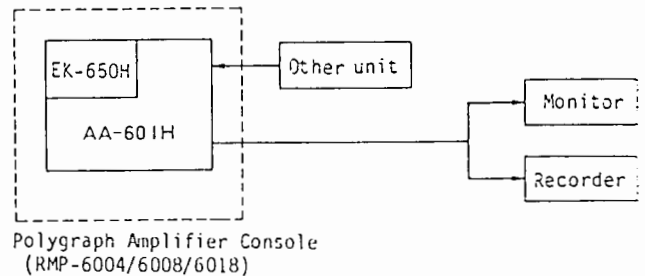


B. When the Coupler is plugged into into the Coupler Housing JH-620H/640H.



The coupler can be located near the patient.

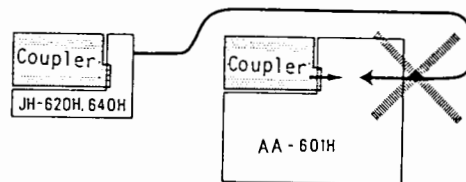
C. To use the AA-650H as a DC amplifier.



If the Direct Input Coupler is used, the input signal can be applied from the coupler front panel.

NOTE

Do not apply both signal to the Coupler Amplifier from the coupler in the Coupler Housing and the Coupler in the Coupler Amplifier.



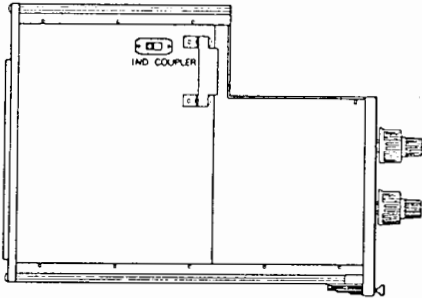
Be sure to cover the coupler accommodation with the blank Panel (EK-650H) when the Coupler is plugged in the Coupler Amplifier.

Calibration signal can not be applied when the internal switch is set to COUPLER in composition A and B.

INTERNAL SWITCH SETTING

Pull the module lock lever and draw out the amplifier from the Polygraph Amplifier console. Remove the side shield plate from the amplifier and check to see that the following switches are set properly as follows.

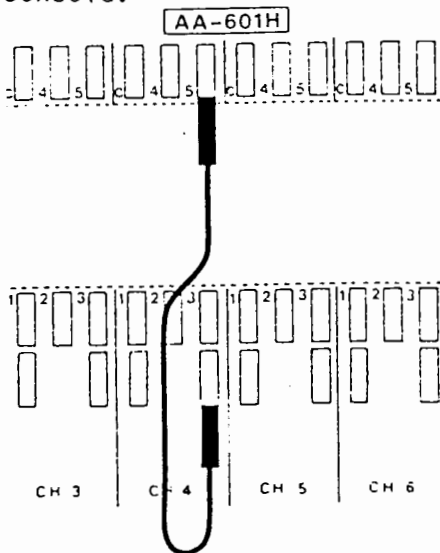
COUPLER: Composition A or B
(mentioned in SYSTEM
COMPOSITION)
IND : Composition C



Restore the unit to the Polygraph Amplifier Console.

CONNECTION BOARD WIRING

Draw out the connection board from the Amplifier Console. Connect socket (3) to (5) of the channel with the connection lead. After connection, restore the connection board to the console.



AA601H(A)

POWER ON

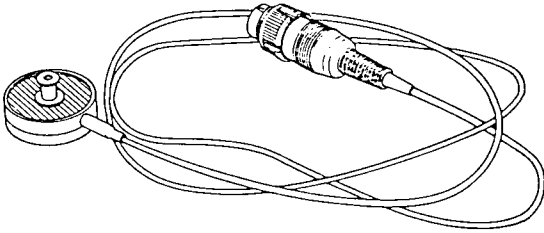
After making sure that the ground lead and power cord are properly connected, turn on the power of the rack, console, monitor and recorder. Check to see that the power indication lamps light.

Measurement

(ACG/PCG/JVP)

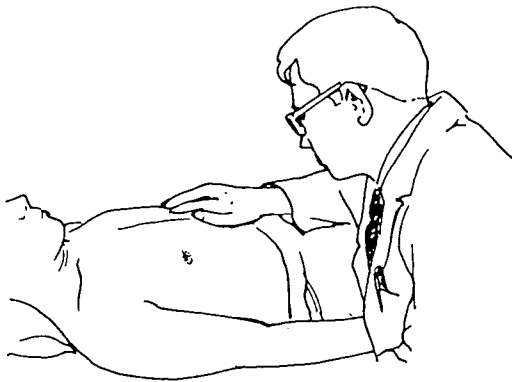
TRANSDUCER CONNECTION

Connect the Pulsewave/PCG transducer (TK-601T) to the ACG/CAP coupler (AK-650H).

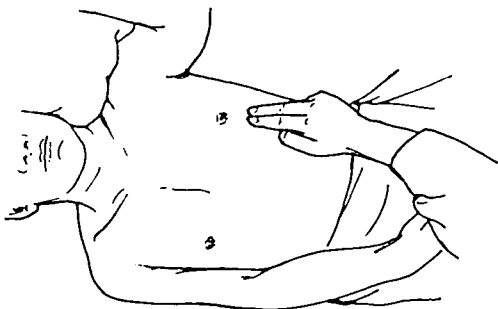


TRANSDUCER PLACEMENT FOR ACG/PCG MEASUREMENT

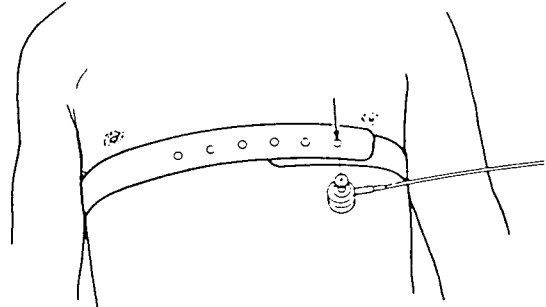
Find the center of the chest wall vibration by manipulation.



Or have the patient lay on his/her side and the measuring position for ACG will be easily found.



Place the transducer on the measuring position where the vibration can be felt through the transducer. Fix it with a strap.

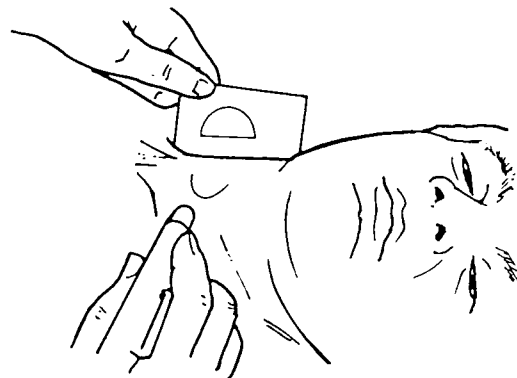


NOTE

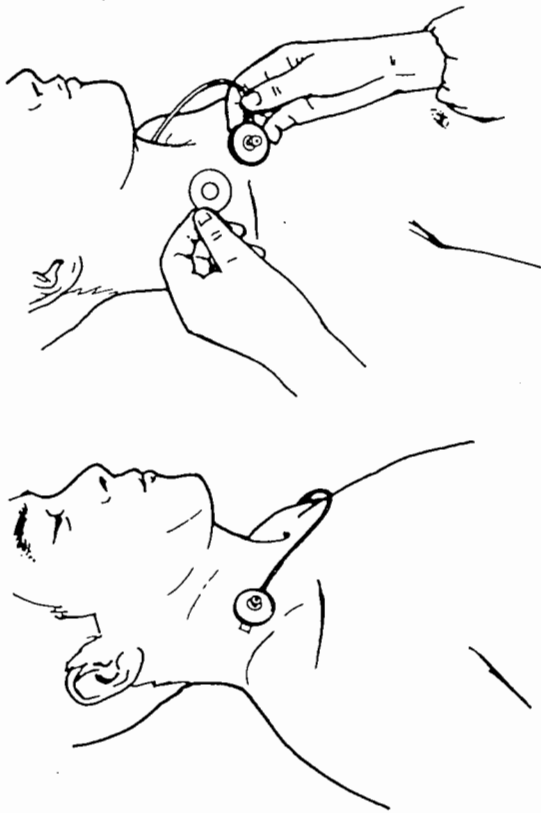
For PCG measurement, a transducer without an adaptor provides higher sensitivity.

TRANSDUCER PLACEMENT FOR JVP MEASUREMENT

As jugular venous pulse is usually found in the area along the sternomastoid muscle of right cervical region, lay the patient on his/her side and measure jugular venous pulse at the position where the multi-peak vibration can be detected. Jugular venous pulse can be located by using a piece of white paper as a backdrop and shining a light across the surface of the neck. Measurement site of the pulse will be visible.



Apply the double-sided adhesive collar to the transducer and affix it to the measuring position.



NOTE

Do not apply any pressure to the transducer during placement. Allow it to gravity rest by its own weight.

COUPLER AMPLIFIER CONTROL SETTING

Set the control switches so that the proper waveform is obtained. The following is the most common setting.

TIME CONST 3.0s
 HI CUT 100Hz
 SENSITIVITY 0.1V/DIV

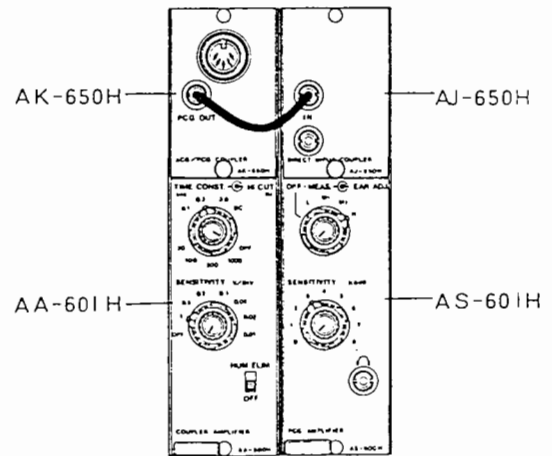
MEASUREMENT

ACG and JVP Measurement

1. Feed the recording paper at low speed and adjust coupler amplifier sensitivity so that the amplitude of the ACG or JVP becomes 3 to 5cm.
2. Have the patient hold their breath during measurement.

Simultaneous Measurement of ACG and PCG

To measure ACG and PCG simultaneously, connect the couplers and coupler amplifier as shown in the following figure.

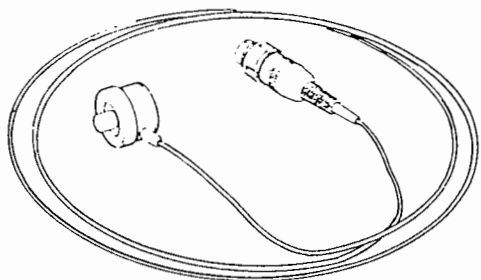


Measurement

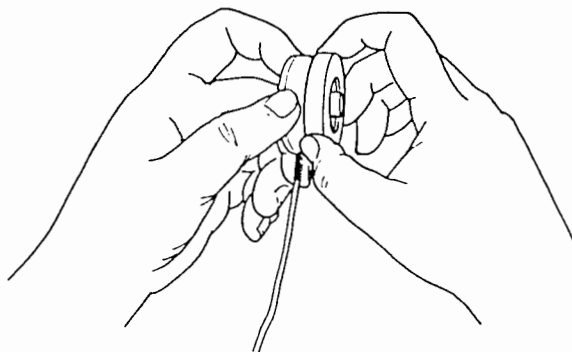
(CAP)

TRANSDUCER CONNECTION

Connect the Sphygmograph transducer (TF-601T) to the ACG/CAP coupler (AK-650H).



Rotate the ring to adjust pellet height according to the depth of the patient's carotid artery.

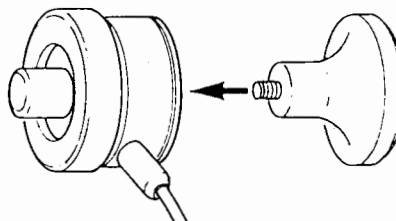


TRANSDUCER PLACEMENT

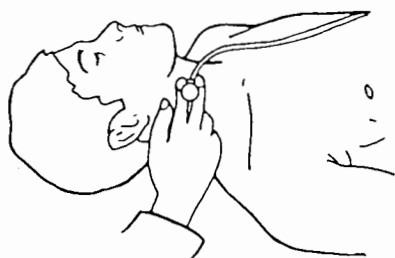
The carotid artery is located deep between the right sternocleidomastoid muscle and the trachea. Find the strongest pulsatile point by means of manipulation.



Mount the knob on the transducer.



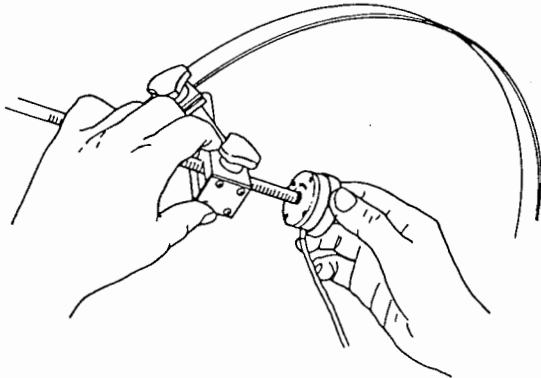
Hold the knob on the transducer with the index and middle fingers. Press the transducer on the measuring site.



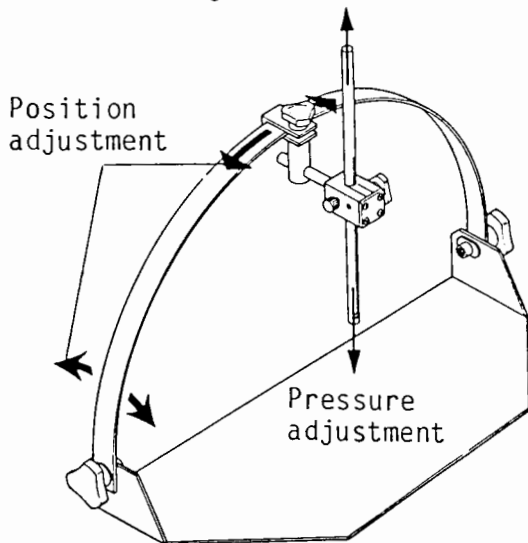
TRANSDUCER SUPPORT KH-110S

The optional Transducer Support KH-110S supports the TF-601T Sphygmograph Transducer to provide an appropriate and stable positioning for the contact on the measuring site.

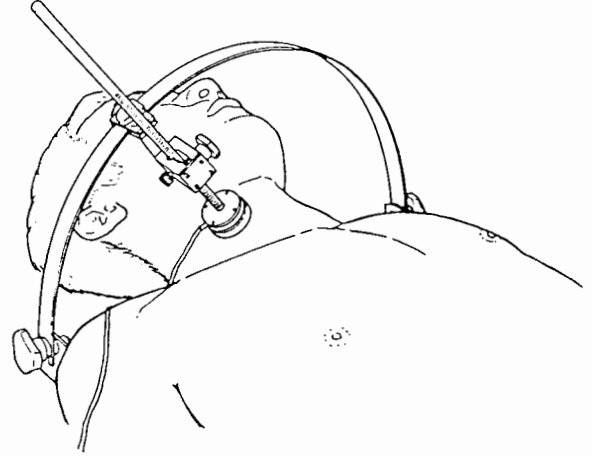
1. Remove the knob from the transducer and mount the transducer on the bottom end of the pressure rod.



2. Adjust the position of the rod with the position adjustment lock-holder on the arm so that the pellet on the transducer is placed perpendicular to the measuring site.



3. Pass the patient's head under the arm of the transducer. Move the pressure rod up or down. Adjust the height of the pellet with a small amount of pressure applied to the measuring site and secure the transducer to the arm.



COUPLER AMPLIFIER CONTROL SETTING

Set the control switches so that the proper waveform is obtained. The following is the most common setting.

TIME CONST	3.0 s
HI CUT	100Hz
SENSITIVITY	0.1V/DIV

MEASUREMENT

1. Feed the recording paper at low speed and adjust coupler amplifier sensitivity so that the amplitude of the CAP becomes 3 to 5 cm.
2. Have the patient hold their breath during measurement.

Measurement

(RESPIRATION)

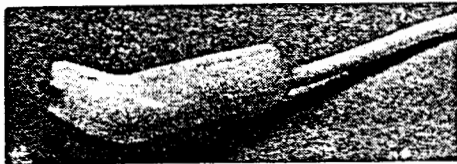
TRANSDUCER CONNECTION

Connect the Respiration Pickup to the Resp/Sphygmo Coupler (AR-650H).

TRANSDUCER PLACEMENT

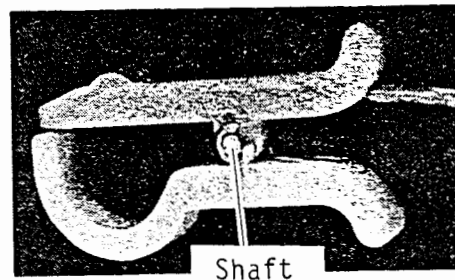
Respiration Pickup (TR-611R)

Place the pickup tip inside the nostril as shown in the following figure and fix the lead wire firmly to the cheek with adhesive tape.



Thermistor Pickup (TR-612T)

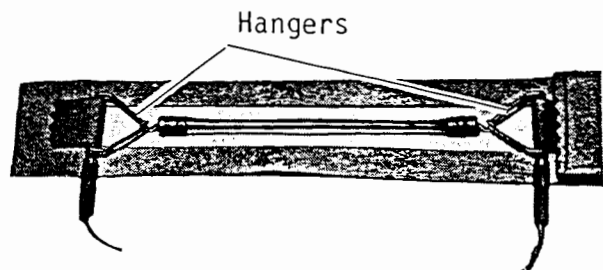
- Insert the pickup into the nostril up to the shaft located at the middle of the pickup, where the pickup is installed. Since the pickup is located at the boundary between the atmosphere and the nasal cavity, it provides maximum temperature difference. Fix the lead wire firmly to the cheek with adhesive tape.



Elastic Rubber Tubing Pickup (TR-601T)

Small Type Elastic Rubber Tubing Pickup (TR-602T)

1. Wrap the belt around the lower part of the ribs (between the 6th and 7th rib). The belt should be wound when the patient has fully inspired.
2. Connect the tube between the hangers. The tension of the belt should be such that the limiter part of the belt is slightly loose and the belt is tightened with the rubber tube.
3. Insert the input cord plugs into the receptacles at the base of the hangers as shown below.



COUPLER AMPLIFIER CONTROL SETTING

Set the control switches so that the proper waveform is obtained. The following is the most common setting.

TIME CONST : 3.0 s
HI CUT : 100Hz
SENSITIVITY: 0.1V/DIV

MEASUREMENT

1. Feed the recording paper at low speed and adjust coupler amplifier sensitivity so that the amplitude of the respiration becomes 3 to 5 cm.
2. Have the patient hold their breath during measurement.

Measurement

(PLETHYSMOGRAPH)

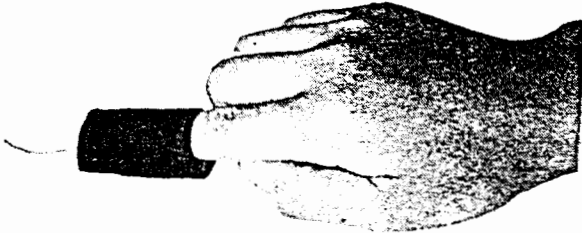
TRANSDUCER CONNECTION

Connect the Respiration pickup to the Resp/Sphygmo Coupler (AR-650H).

TRANSDUCER PLACEMENT

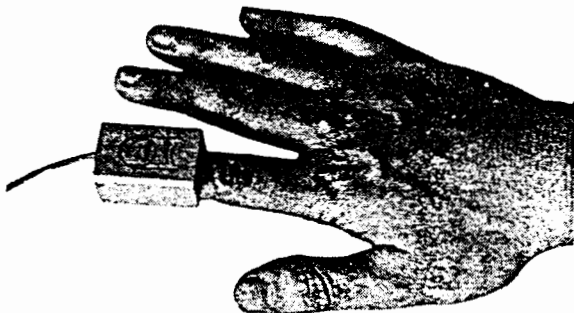
Reflection type (MPP-3A)

Place the finger on the detector when measurement is to be made. Attach it with the light shielding strap. Adjust the fixing pressure to obtain a good measuring result, since the pressure affects the amplitude and waveform of the plethysmograph.



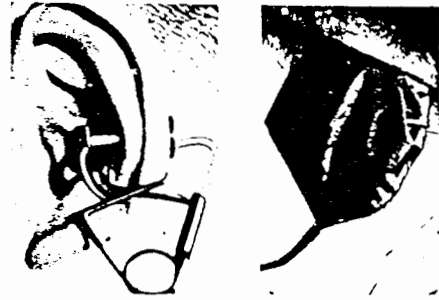
Cap type (MPP-3B)

Insert the finger tip into the pickup as deeply as possible. When the spring inside the transducer is too strong, adjust it by widening the cover.



Earpiece type (MPP-3C)

- Fix the transducer to the earpiece and then put a shading cover on the transducer to shade it from external light.



COUPLER AMPLIFIER CONTROL SETTING

Set the control switches so that the proper waveform is obtained. The following is the most common setting.

TIME CONST	3.0 s
HI CUT	100Hz
SENSITIVITY	0.1V/DIV

MEASUREMENT

1. Feed the recording paper at low speed and adjust coupler amplifier sensitivity so that the amplitude of the respiration becomes 3 to 5 cm.
2. Have the patient hold their breath during measuring.

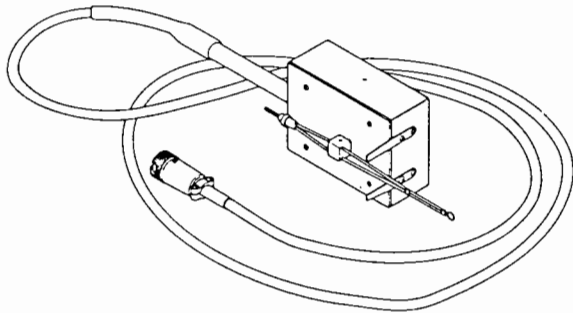
Measurement

(DISPLACEMENT)

In combination with the Isotonic Transducer TD-112S, the Coupler EG-650H is used in the fields of pharmacology and physiology to measure the effects of a dosage on the isotonic contraction and relaxation of muscle specimens (such as smooth muscle of the womb or digestive track.)

TRANSDUCER CONNECTION

Connect the Isotonic transducer (TD-112S) to the Isotonic coupler (EG-650H).



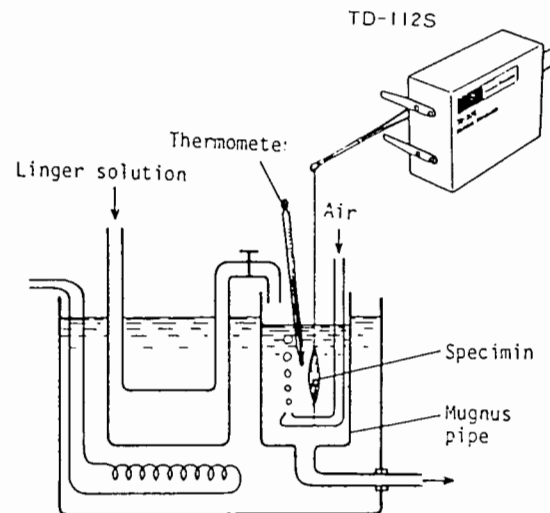
COUPLER AMPLIFIER CONTROL SETTING

Set the control switches so that the proper waveform is obtained. The following is the most common setting.

TIME CONST : DC
HI CUT : 30Hz
SENSITIVITY : 1V/DIV

Set the COUPLER-IND selector(8) to COUPLER.

TRANSDUCER PLACEMENT AND CALIBRATION



Experiment by Magnus method

1. Set the 10mm-1mm selector switch(5) to either the 1 or 10mm position according to the subject to be measured.
2. Connect the Isotonic Transducer to the Input connector(1).
3. Connect the transducer to the subject transducer.
4. Set the MEAS-CAL switch(3) to MEAS.
5. Set the Recording switch of the recorder to RUN and feed the paper at about 10mm/min.
6. Adjust the BALANCE control(2) so that the recording pen moves to the lower segment of the recording paper.
7. Set the MEAS-CAL switch(3) to CAL and press the CAL switch on the Polygraph Amplifier console.
8. Adjust the pen amplitude with the SENSITIVITY control on the Coupler amplifier.

MEASUREMENT

After calibrating the sensitivity as described above, start measurement as follows:

1. Set the MEAS-CAL switch to MEAS.
2. Set the Recording switch of the recorder to RUN and feed the paper at the proper speed.
3. Pour the proper amount of medicine into the Magnus tube and measure the contraction and relation of the muscle.

Example: Test for medicine

Measurement

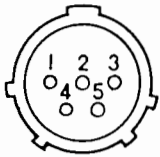
(DC SIGNAL)

The Coupler Amplifier AA-601H without the coupler can be used for a DC amplifier. Two methods of input connection are available as follows.

SIGNAL CONNECTION

Input via the rear panel

When signal is applied via the input connector on the rear panel of the Polygraph Amplifier Console, set the internal switch to IND position. Use the input cord provided with the Polygraph Amplifier Console. connector pin assignment is as follows.



- 1: Not connected
- 2: (+) Input
- 3: Not connected
- 4: Ground
- 5: Not connected

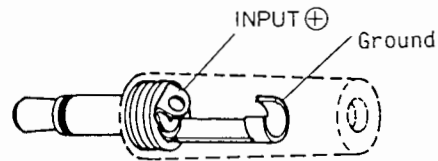
Connector type JRC13P-5P
Code No. 5310067

Be sure to cover the coupler accommodation opening of the Coupler Amplifier with the Blank Panel in this signal connection.

Input via the front panel

When signal is applied via the input connector of the Direct Input Coupler(AJ-650H) installed in the Coupler Amplifier, set the internal switch to COUPLER position. The Direct Input Coupler is used in simultaneous measurement of ACG and PCG or of multichannel PCG. Use the input cord provided with the Direct Input coupler.

The plug of the input cord is;



Code No. 5440283

SENSITIVITY CALIBRATION

Calibration is available only when the internal selector is set to IND position.

Press the CAL switch on the Polygraph Amplifier Console and adjust the SENSITIVITY fine control of the Coupler Amplifier so that calibration waveform of 1 DIV deflection is obtained.

Calibration deflection is constant independently of the SENSITIVITY selector setting. Calibration waveform is always a square waveform delivered independently of the TIME CONST selector setting.

Free Coupler Usage (EK-660H)

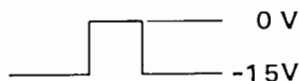
The Free Coupler has a universal printed circuit board to design your own coupler.

SIGNAL ASSIGNMENT

A	OUTPUT (+)	Output terminal
B	0V	
C	Shield	
D	0V	Power supply terminal
E	+15V	
F	-15V	
1		Not connected
2		
3		
4		
5	INST	
6	CAL	

NOTE

- Accuracy of power voltage $\pm 15V$ is $\pm 6\%$.
Maximum current is 100mA respectively.
- The following step signal appears at terminal 5 when the INST button on the Polygraph Amplifier console is pressed.
This means that when the INST button is not pressed, the voltage at terminal 5 is -15 volts.
When the INST button is pressed, the voltage changes to zero volt. Thus

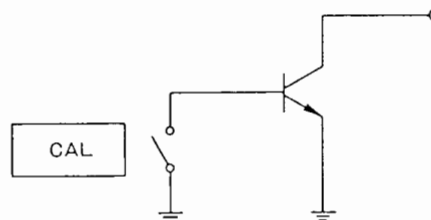


a step signal can be obtained when the INST button on the Polygraph Amplifier Console is pressed. This step signal can be used as an INST signal.

(For example, if this step signal is applied to the gate of a FET or a transistor, the FET or the transistor functions as an INST circuit. The INST circuit is a trace reset circuit which stabilizes the trace within less than a second.)

- The terminal 6 (CAL) is connected to the collector of the following circuit.

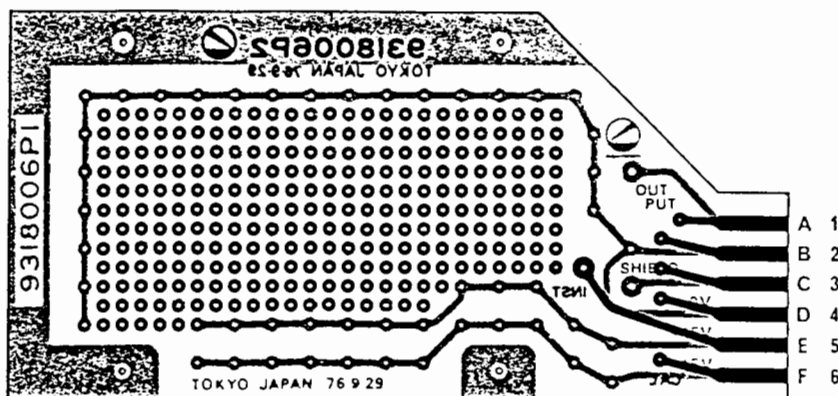
The transistor and the CAL switch in the following figure are circuits in the Polygraph Amplifier Console.



Do not mount the parts on the printed side of the board.

NOTE

Any trouble or problem caused by this unit is not covered by our guarantee.



Printed pattern in actual size

Specifications

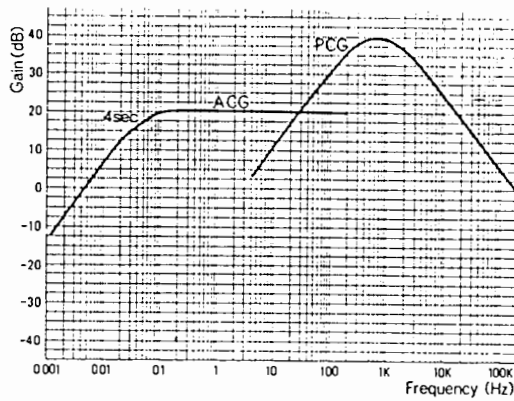
COUPLER AMPLIFIER (AA-601H)

Input Resistance	2M Ω , $\pm 10\%$
Internal Noise	$< 100\mu\text{Vp-p}$ (Referred to input, at Hi-cut 100Hz, when the input terminal is grounded through 1k Ω .)
Maximum Sensitivity	$> 1\text{V}/10\text{mV}$
Hi-cut	30-100-300-100Hz (-3dB) $\pm 20\%$ OFF($> 3\text{kHz}$, -3dB)
Time Constant	DC-3-0.3-0.1 sec, $\pm 20\%$
Sensitivity V/DIC	0.01-0.02-0.05-0.1-0.2-0.5-1V/DIV
FINE	10 $\pm 2\text{dB}$, continuously variable. Accuracy $\pm 3\%$
Linearity	$\pm 0.5\%$ F.S ($\pm 5\text{V}$), load impedance $> 5\text{k}\Omega$
Output Voltage	$\pm 5\text{V}$
Output Resistance	$< 50\Omega$
AC Interference Filter	Rejection ratio $> 23\text{dB}$ at 50 or 60Hz
Drift	
Temperature drift	$< 50\mu\text{V}/^\circ\text{C}$ (referred to input)
Time drift	$< 20\mu\text{V}/\text{H}$ (referred to input)
Dimensions and Weight	50(W) x 200(H) x 280(D) mm Approx. 0.9kg

ACG/CAP COUPLER (AK-650H)

Input Impedance	20M Ω -E-20M Ω
Sensitivity	40dB (PCG) 20dB (ACG)
Internal Noise	$< 50\mu\text{Vp-p}$ (PCG)
Time Const	4 sec

Frequency Response



RESP/SPHYGMO COUPLER (AR-650H)

Input Impedance	$1M\Omega + 11\mu F$, $<\pm 10\%$
Internal Noise	$100\mu V_{p-p}$
Sensitivity	$20\pm 3dB$
Frequency Response	100Hz (-3dB)
Time Const	> 8 sec
Linearity	$<\pm 0.5\%$ F.S ($1V_{p-p}$), load impedance $> 5k\Omega$
Transducer Supply Voltage	$2.5\pm 0.5V$
Drift	
Temperature drift	$<\pm 50\mu V/^\circ C$ (referred to input)
Time drift	$<\pm 50\mu V/H$ (referred to input)

DISPLACEMENT COUPLER (EG-650H)

Measuring Range	0-50mm(p-p) when connected to TD-112S
Sensitivity	0dB
Linearity	$<\pm 1\%$ F.S ($\pm 5V$)
Balance signal	1mm, 10mm, $<\pm 3\%$
Output Impedance	$> 1k\Omega$

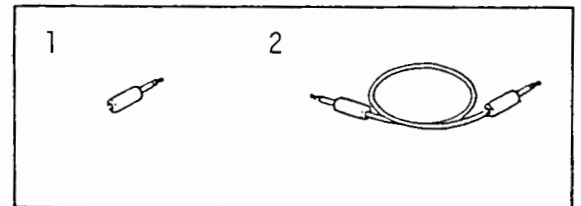
Standard Accessories

COUPLER AMPLIFIER (AA-601H)

None

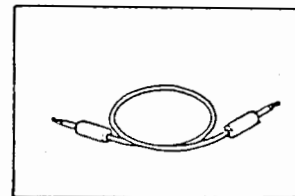
DIRECT INPUT COUPLER (AJ-650H)

No.	Description	Q'ty	Code No.
1	Plug	1	5440283
2	Connection cord	1	5511982



ACG/CAP COUPLER (AK-650H)

Description	Q'ty	Code No.
Connection cord	1	5511982



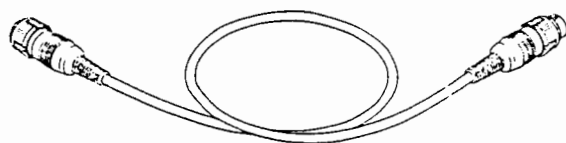
RESP/SPHYGMO COUPLER (AR-650H)
 DISPLACEMENT COUPLER (EG-650H)
 FREE COUPLER (EK-650H)

None

Optional Accessories

Extension Input cord (5512116)

Used for AK-650H and AR-650H



Blank Panel (EK-650H)

AA601H(A)

Panel Illustration

